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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/797,580

Filing Date: March 11, 2004

Appellant(s): DIETRICH ET AL.

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Joseph Rhoa  
For Appellant

MAILED  
JUL 06 2007  
GROUP 1700

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/28/2007 appealing from the Office action mailed 6/22/2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is substantially correct. The appellant incorrectly states that claim 17 is pending and rejected. Claim 17 has been canceled.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is substantially correct. The appellant incorrectly asserts that the specification explains unexpected and surprising results. As explained by the examiner in the subsequent argument section, the specification fails to explain how the results are unexpected or surprising.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**GROUNDΣ OF REJECTION NOT ON REVIEW**

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief:

1. Whether claims 2 and 16 are unpatentable under Section 103(a) over Glaser in view of Depauw in view of anyone of Anzaki or Arbab.
2. Whether claims 8 and 23 are unpatentable under Section 103(a) over Glaser in view of Depauw in view of anyone of Baldwin or Sol.
3. Whether claims 2 and 16 are unpatentable under Section 103(a) over Hartig in view of Depauw in view of anyone of Anzaki or Arbab.
4. Whether claims 8 and 23 are unpatentable under Section 103(a) over Hartig in view of Depauw in view of anyone of Baldwin or Sol.
5. Whether claims 2 and 16 are unpatentable under Section 103(a) over Lemmer in view of Depauw in view of anyone of Anzaki or Arbab.
6. Whether claims 8 and 23 are unpatentable under Section 103(a) over Lemmer in view of Depauw in view of anyone of Baldwin or Sol.
7. Whether claims 12-14, 27, 31 and 33 are unpatentable under Section 103(a) over Lemmer in view of Depauw in view of anyone of Hartig or Applicant's Disclosure.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,837,361	GLASER	11-1998
5,153,054	DEPAUW	10-1992
5,557,462	HARTIG	9-1996
5,718,980	KOCH	2-1998
6,336,999	LEMMER	1-2002
6,686,050	LINGLE	2-2004

**(9) Grounds of Rejection**

The following grounds of rejection are applicable to the appealed claims:

*Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-7, 11-15, 18-22, 26, 27 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,837,361 to Glaser in view of USPN 5,153,054 to Depauw.

Regarding claims 1, 4-7, 11-15, 18-22, 26, 27 and 30-33, Glaser discloses (see entire document including column 3, lines 17-66 and column 4, lines 45-58) a coated article comprising a coating supported by a glass substrate, the coating comprising at least the following layers from the glass substrate outwardly:

a dielectric layer  
a zinc oxide layer  
a silver layer  
a nichrome oxide layer  
a dielectric layer  
a zinc oxide layer  
a silver layer  
a nichrome oxide layer  
a dielectric layer.

Glaser does not specifically mention adding a zinc oxide layer above one or more of the sacrificial nichrome layers, but Depauw discloses that it is known in the art to add a zinc oxide layer above sacrificial metal layers to protect the silver layer from corrosion (see entire document including column 3, lines 14-37). Depauw even discloses that the location of the zinc oxide layer above the sacrificial metal layers is particularly important (column 4, lines 6-18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to place a zinc oxide layer above each of the overlying sacrificial metal layers, because the zinc oxide layers would protect the silver layer against corrosion.

Glaser does not specifically mention heat treating (thermally tempering) the coated article, but Depauw discloses that it is known in the art to heat treat an article to make it suitable for automotive applications (column 4, lines 25-40). It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat treat the article, because heat treating allows for use of the coated article in automotive glass applications. Considering that

the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed visible transmission, sheet resistance, and normal emissivity.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Regarding claims 4-7, 19-22 and 30-33, Glaser discloses that the dielectric layers may comprise silicon nitride and/or a layer of tin oxide (column 3, lines 26-66).

Regarding claims 11-14, 26, 31 and 33, considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed properties.

Regarding claims 12-14, 27, 31 and 33, Glaser discloses that the coated article may be laminated to another glass substrate (column 4, lines 25-33).

3. Claims 1, 4-5, 11-15, 18-20, 26-27 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,557,462 to Hartig in view of USPN 5,153,054 to Depauw.

Regarding claims 1, 4-5, 11-15, 18-20, 26-27 and 30-33, Hartig discloses (see entire document including column 6, lines 23-67) a coated article comprising a coating supported by a glass substrate, the coating comprising at least the following layers from the glass substrate outwardly:

a silicon nitride dielectric layer

a silver layer

a nichrome oxide layer

a silicon nitride layer

a silver layer

a nichrome oxide layer

a silicon nitride layer.

Hartig does not specifically mention placing a zinc oxide layer directly below each silver layer while also placing a zinc oxide layer above the overlying sacrificial metal layers, but Depauw discloses that it is known in the art to place a zinc oxide layer directly below each silver layer while also placing a zinc oxide layer above the overlying sacrificial metal layers to protect the silver layer against corrosion (see entire document including column 3, lines 14-37, column 6, lines 26-35 and column 7, lines 41-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to place a zinc oxide layer directly below each silver layer while also placing a zinc oxide layer above the overlying sacrificial metal layers, because the zinc oxide layers would protect the silver layer against corrosion.

Hartig does not specifically mention heat treating (thermally tempering) the coated article, but Depauw discloses that it is known in the art to heat treat an article to make it suitable for automotive applications (column 4, lines 25-40). It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat treat the article, because heat treating allows for use of the coated article in automotive glass applications. Considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed visible transmission, sheet resistance, and normal emissivity.

Regarding claims 11-14, 26, 31 and 33, considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed properties.

Regarding claims 12-14, 27, 31 and 33, Hartig discloses that the coated article may be laminated to another glass substrate (column 1, lines 14-24).

4. Claims 6-7 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,557,462 to Hartig in view of USPN 5,153,054 to Depauw as applied to claims 1, 4-5, 11-15, 18-20, 26-27 and 30-33 above, and further in view of USPN 5,718,980 to Koch.

Hartig does not specifically mention a using a multi-layer dielectric layer, but Koch discloses that it is known in the art to use a silicon nitride dielectric layer or a multi-layer comprising a silicon nitride layer and a tin oxide layer (see entire document including column 3, lines 35-47). It would have been obvious to one having ordinary skill in the art at the time the

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invention was made to make the dielectric layer from any suitable dielectric material, such as a multi-layer of silicon nitride and tin oxide, because the multi-layer possesses the advantages of each layer, and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

5. Claims 1, 4-5, 11, 15, 18-20, 26, 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,336,999 to Lemmer et al. (hereinafter referred to as Lemmer) in view of USPN 5,153,054 to Depauw.

Regarding claims 1, 4-5, 11, 15, 18-20, 26, 30 and 32, Lemmer discloses (see entire document including Figure 2) a coated article comprising a coating supported by a glass substrate, the coating comprising at least the following layers from the glass substrate outwardly:

- a silicon nitride dielectric layer
- a silver layer
- a nichrome oxide layer
- a silicon nitride layer
- a silver layer
- a nichrome oxide layer
- a silicon nitride layer.

Lemmer does not specifically mention placing a zinc oxide layer directly below each silver layer while also placing a zinc oxide layer above the overlying sacrificial metal layers, but Depauw discloses that it is known in the art to place a zinc oxide layer directly below each silver layer while also placing a zinc oxide layer above the overlying sacrificial metal layers to protect the silver layer against corrosion (see entire document including column 3, lines 14-37, column

6, lines 26-35 and column 7, lines 41-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to place a zinc oxide layer directly below each silver layer while also placing a zinc oxide layer above the overlying sacrificial metal layers, because the zinc oxide layers would protect the silver layer against corrosion.

Lemmer discloses that the coated article may be used for automotive windows (column 1, lines 9-17), but Lemmer does not specifically mention heat treating the coated article. Depauw discloses that it is known in the art to heat treat (thermally temper) an article to make it suitable for automotive applications (column 4, lines 25-40). It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat treat the article, because heat treating allows for use of the coated article in automotive glass applications. Considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed visible transmission, sheet resistance, and normal emissivity.

Regarding claims 11 and 26, considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification), it appears that the coated article inherently possesses the claimed properties.

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6. Claims 6-7 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,336,999 to Lemmer in view of USPN 5,153,054 to Depauw as applied to claims 1, 4-5, 11, 15, 18-20, 26, 30 and 32 above, and further in view of USPN 5,718,980 to Koch.

Lemmer does not specifically mention a using a multi-layer dielectric layer, but Koch discloses that it is known in the art to use a silicon nitride dielectric layer or a multi-layer comprising a silicon nitride layer and a tin oxide layer (see entire document including column 3, lines 35-47). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the dielectric layer from any suitable dielectric material, such as a multi-layer of silicon nitride and tin oxide, because the multi-layer possesses the advantages of each layer, and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

#### (10) Response to Argument

##### A. Section 103(a) rejections based on Glaser in view of Depauw

###### Claim 1

The appellant asserts that there is no motivation to add a zinc oxide layer above one or more of the sacrificial nichrome layers of Glaser. The examiner respectfully disagrees. Depauw discloses that it is known in the art to add a zinc oxide layer above sacrificial metal layers to protect the silver layer from corrosion (see entire document including column 3, lines 14-37). Depauw even discloses that the location of the zinc oxide layer above the sacrificial metal layers is particularly important (column 4, lines 6-18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to place a zinc oxide layer above each

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of the overlying sacrificial metal layers, because the zinc oxide layers would protect the silver layer against corrosion.

Despite the clear motivation to add a zinc oxide layer above one or more of the sacrificial nichrome layers of Glaser, the appellant asserts that there is no motivation because the layer below the zinc oxide layer of Depauw is a sacrificial layer of stainless steel. The appellant appears to be suggesting that the zinc oxide layer is worthless without an underlying stainless steel layer and that it would be necessary to replace the nichrome layers of Glaser with stainless steel layers. The examiner respectfully disagrees. Firstly, it is well settled that unsupported arguments are no substitute for objective evidence. In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). Considering that the appellant fails to set forth any evidence supporting said assertion, the assertion is completely without merit. Secondly, Depauw specifically discloses that the improvements of the invention are achieved by the zinc oxide layer (column 4, lines 6-18). Depauw does not teach or suggest that stainless steel must be used as the sacrificial layer material. As a matter of fact, Glaser and Depauw disclose some of the same sacrificial layer materials, such as titanium or tin (see column 3, lines 21-37 of Depauw and column 3, lines 49-61 of Glaser). Thirdly, the sacrificial stainless steel layer of Depauw simply serves the purpose of protecting the silver layer against oxidation (column 5, lines 22-36) while the sacrificial nichrome layer of Glaser performs the exact same function (see column 3, lines 49-61).

The appellant asserts that the applied prior art fails to teach or suggest heat treating the coated article. The examiner respectfully disagrees. Glaser does not appear to specifically mention heat treating (tempering) the coated article, but Depauw discloses that it is known in the

art to heat treat the coated to make (safety) glass suitable for automotive applications (column 4, lines 25-40). It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat treat the article, because heat treating allows for use of the coated article in automotive glass applications. Considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed visible transmission, sheet resistance, and normal emissivity.

The appellant asserts that the applied prior art does not disclose or suggest the claimed visible transmission, sheet resistance, or emissivity. The examiner respectfully disagrees. The claims are rejected by a combination of references, therefore, the visible transmission, sheet resistance, and emissivity of the resulting structure are obviously not disclosed by just one of the references. Considering that the coated articles taught by the combinations of references are substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the current specification), it appears that the coated articles inherently possesses the claimed visible transmission, sheet resistance, and normal emissivity.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to

obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

The appellant asserts that the coated substrate taught by the applied prior art would not inherently possess the claimed light transmission of at least 80% because the single silver layer embodiments taught in the examples of Glaser have a light transmission of 77%. The examiner respectfully disagrees. Firstly, regarding appellant's assertion that single silver layer coatings "typically" have a transmission higher than similar double silver layer coatings, the examiner respectfully agrees. With that said, the appellant fails to appreciate the other variables affecting the visible transmission of a coated article. As is well known to one skilled in the art, many other variables, such as dielectric layer material, the number of dielectric layers, and layer thicknesses, greatly affect the visible transmission of coated articles. It is noted that the dielectric layers serve to increase transmission and to reduce reflective glare. Secondly, the appellant is comparing apples to oranges. The examples of Glaser possess only a single silver layer, only two dielectric coatings, include Bi<sub>2</sub>O<sub>3</sub> (bismuth oxide), and only illustrate embodiments with specific layer thicknesses. Glaser clearly discloses that bismuth oxide, tin oxide, and/or silicon nitride may be used as to construct the dielectric coatings (column 3, line 40 to column 4, line 14). In addition, Glaser discloses that two functional layers may be sandwiched between three coatings based on dielectric material (column 4, lines 45-58). The appellant is hard pressed to explain how the applied prior art teaches the exact same structures illustrated in Figure 1 and Figure 2 of the current application, yet the structures somehow fail to inherently possess the claimed properties.

The appellant asserts that the coated substrate taught by the applied prior art would not inherently possess the claimed emissivity of less than or equal to about 0.04 because the single silver layer embodiments taught in the examples of Glaser have a light transmission of 0.08. The examiner respectfully disagrees. The appellant appears to be confusing the teachings of Depauw with the teachings of Glaser. Although the coated substrate of Depauw possesses an emissivity of about 0.08 (column 9, lines 3-10), the examples of Glaser possess emissivities of less than 0.04. Specifically, each example possesses an emissivity of 0.03.

The appellant mentions the existence of unexpected results. The examiner respectfully disagrees. Firstly, the appellant has failed to show that the alleged unexpected results are related to the zinc oxide layer. The current specification ([0046]) compares the coated article of Examples 1-3 of USPN 6,686,050 to Lingle (see Figure 5 of USPN 6,686,050) with the coated article in Figure 1 of the current specification. The coated articles are wildly different. The appellant has failed to show, or attempt to show, that the alleged unexpected results are due to zinc oxide layer. Secondly, the alleged unexpected results mentioned in the specification are not unexpected. The specification asserts that the zinc oxide layer unexpectedly results in one or more of higher visible transmission, improved thermal stability, lower sheet resistance, and lower emissivity. Depauw teaches that these results are not unexpected. Depauw discloses that a zinc oxide layer, located in an identical position to that currently claimed, results in an article with high visible transmission, improved thermal stability upon heat treatment, and low emissivity (see entire document including column 4, lines 6-40, column 5, lines 37-46, column 6, lines 17-25, and column 9, lines 3-10). Depauw even discloses that the location of the zinc oxide layer above the sacrificial metal layers is particularly important (column 4, lines 6-18). It is

further noted that the specification acknowledges that the reasons for the alleged unexpected results are not entirely clear ([0031]). Not only does Depauw disclose that the results are expected, Depauw at least partially explains the reason for the results. Depauw discloses that the zinc oxide layer may diffuse through the sacrificial layer to effect a degree of passivation of the silver (column 4, lines 6-18).

Claim 11

The appellant asserts that the applied prior art fails to teach or suggest the claimed properties. The examiner respectfully disagrees. Considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed properties.

Claim 15

The appellant asserts that the applied prior art fails to teach or suggest the claimed limitations for the reasons set forth above regarding claim 1. The examiner respectfully disagrees for the reasons set forth above.

Claims 30 and 32

The appellant asserts that the applied prior art fails to teach or suggest the claimed limitations for the reasons set forth above regarding claim 1. The examiner respectfully disagrees for the reasons set forth above.

**B. Section 103(a) rejections based on Hartig in view of Depauw**

Claim 1

The appellant asserts that there is no motivation to add a zinc oxide layer above one or more of the sacrificial nichrome layers of Hartig. The examiner respectfully disagrees. Depauw discloses that it is known in the art to add a zinc oxide layer above sacrificial metal layers to protect the silver layer from corrosion (see entire document including column 3, lines 14-37). Depauw even discloses that the location of the zinc oxide layer above the sacrificial metal layers is particularly important (column 4, lines 6-18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to place a zinc oxide layer above each of the overlying sacrificial metal layers, because the zinc oxide layers would protect the silver layer against corrosion.

Despite the clear motivation to add a zinc oxide layer above one or more of the sacrificial nichrome layers of Hartig, the appellant asserts that there is no motivation because the layer below the zinc oxide layer of Depauw is a sacrificial layer of stainless steel. The appellant appears to be suggesting that the zinc oxide layer is worthless without an underlying stainless steel layer and that it would be necessary to replace the nichrome layers of Hartig with stainless steel layers. The examiner respectfully disagrees. Firstly, it is well settled that unsupported arguments are no substitute for objective evidence. In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). Considering that the appellant fails to set forth any evidence supporting said assertion, the assertion is completely without merit. Secondly, Depauw specifically discloses that the improvements of the invention are achieved by the zinc oxide layer (column 4, lines 6-18). Depauw does not teach or suggest that stainless steel must be used as the

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sacrificial layer material. Thirdly, the sacrificial stainless steel layer of Depauw simply serves the purpose of protecting the silver layer against oxidation (column 5, lines 22-36) while the sacrificial nichrome layer of Hartig performs the exact same function.

The appellant asserts that the nichrome layers taught by the applied prior art are not at least partially oxidized. The examiner respectfully disagrees. Hartig does not appear to specifically mention heat treating (thermally tempering) the coated article, but Depauw discloses that it is known in the art to heat treat coated glass to make (safety) glass suitable for automotive applications (column 4, lines 25-40). Depauw discloses that the sacrificial metal protects the silver layers through the heat treatment (column 4, lines 36-40). As is known to one skilled in the art, the sacrificial layers "protect" the silver layers by oxidizing in place of the silver oxidizing. In other words, the sacrificial layers are sacrificed for the good of the coating. It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat treat the article, and thus oxidize the nichrome layers, because heat treating allows for use of the coated article in automotive glass applications.

The appellant asserts that the coated substrate taught by the applied prior art would not inherently possess the claimed light transmission of at least 80% because Hartig allegedly only teaches a visible transmission of 76%. The examiner respectfully disagrees. The claims are rejected by a combination of references, therefore, the visible transmission, sheet resistance, and emissivity of the resulting structure are obviously not disclosed by just one of the references. The appellant is hard pressed to explain how the applied prior art teaches the exact same structures illustrated in Figure 1 and Figure 2 of the current application, yet the structures somehow fail to inherently possess the claimed properties.

The appellant mentions the existence of unexpected results. The examiner respectfully disagrees. Firstly, the appellant has failed to show that the alleged unexpected results are related to the zinc oxide layer (22). The current specification ([0046]) compares the coated article of Examples 1-3 of USPN 6,686,050 to Lingle (see Figure 5 of USPN 6,686,050) with the coated article in Figure 1 of the current specification. The coated articles are wildly different. The appellant has failed to show, or attempt to show, that the alleged unexpected results are due to zinc oxide layer. Secondly, the alleged unexpected results mentioned in the specification are not unexpected. The specification asserts that the zinc oxide layer (22) unexpectedly results in one or more of higher visible transmission, improved thermal stability, lower sheet resistance, and lower emissivity (all upon heat treatment). Depauw teaches that these results are not unexpected. Depauw discloses that a zinc oxide layer, located in an identical position to that currently claimed, results in an article with high visible transmission, improved thermal stability upon heat treatment, and low emissivity (see entire document including column 4, lines 6-40, column 5, lines 37-46, column 6, lines 17-25, and column 9, lines 3-10). Depauw even discloses that the location of the zinc oxide layer above the sacrificial metal layers is particularly important (column 4, lines 6-18). It is further noted that the specification acknowledges that the reasons for the alleged unexpected results are not entirely clear ([0031]). Not only does Depauw disclose that the results are expected, Depauw at least partially explains the reason for the results. Depauw discloses that the zinc oxide layer may diffuse through the sacrificial layer to effect a degree of passivation of the silver (column 4, lines 6-18).

Claim 11

The appellant asserts that the applied prior art fails to teach or suggest the claimed properties. The examiner respectfully disagrees. Considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed properties.

Claim 15

The appellant asserts that the applied prior art fails to teach or suggest the claimed limitations for the reasons set forth above regarding claim 1. The examiner respectfully disagrees for the reasons set forth above.

Claims 30 and 32

The appellant asserts that the applied prior art fails to teach or suggest the claimed limitations for the reasons set forth above regarding claim 1. The examiner respectfully disagrees for the reasons set forth above.

**C. Section 103(a) rejections based on Hartig in view of Depauw in view of Koch**

The appellant asserts that no motivation exists to modify Hartig. The examiner respectfully disagrees. Hartig does not specifically mention using a multi-layer dielectric layer, but Koch discloses that it is known in the art to use a silicon nitride dielectric layer or a multi-layer comprising a silicon nitride layer and a tin oxide layer (see entire document including column 3, lines 35-47). Koch discloses that tin oxide has a high deposition speed while silicon nitride is very durable (column 3, lines 35-47). Koch discloses that using a multi-layer of tin oxide and silicon nitride advantageously results in the advantages of each material (column 3, lines 35-47). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the dielectric layer from any suitable dielectric material, such as a multi-layer of silicon nitride and tin oxide, because the multi-layer possesses the advantages of each layer, and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

**D. Section 103(a) rejections based on Lemmer in view of Depauw**

**Claim 1**

The appellant asserts that there is no motivation to add a zinc oxide layer above one or more of the sacrificial nichrome layers of Lemmer. The examiner respectfully disagrees. Depauw discloses that it is known in the art to add a zinc oxide layer above sacrificial metal layers to protect the silver layer from corrosion (see entire document including column 3, lines 14-37). Depauw even discloses that the location of the zinc oxide layer above the sacrificial metal layers is particularly important (column 4, lines 6-18). It would have been obvious to one

having ordinary skill in the art at the time the invention was made to place a zinc oxide layer above each of the overlying sacrificial metal layers, because the zinc oxide layers would protect the silver layer against corrosion.

Despite the clear motivation to add a zinc oxide layer above one or more of the sacrificial nichrome layers of Lemmer, the appellant asserts that there is no motivation because the layer below the zinc oxide layer of Depauw is a sacrificial layer of stainless steel. The appellant appears to be suggesting that the zinc oxide layer is worthless without an underlying stainless steel layer and that it would be necessary to replace the nichrome layers of Lemmer with stainless steel layers. The examiner respectfully disagrees. Firstly, it is well settled that unsupported arguments are no substitute for objective evidence. In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). Considering that the appellant fails to set forth any evidence supporting said assertion, the assertion is completely without merit. Secondly, Depauw specifically discloses that the improvements of the invention are achieved by the zinc oxide layer (column 4, lines 6-18). Depauw does not teach or suggest that stainless steel must be used as the sacrificial layer material. Thirdly, the sacrificial stainless steel layer of Depauw simply serves the purpose of protecting the silver layer against oxidation (column 5, lines 22-36) while the sacrificial nichrome layer of Lemmer performs the exact same function.

The appellant asserts that the nichrome layers of Lemmer are not at least partially oxidized. The examiner respectfully disagrees. Lemmer does not appear specifically mention heat treating (thermally tempering) the coated article, but Depauw discloses that it is known in the art to heat treat coated glass to make safety glass suitable for automotive applications (column 4, lines 25-40). Depauw discloses that the sacrificial metal protects the silver layers

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through the heat treatment (column 4, lines 36-40). As is known to one skilled in the art, the sacrificial layers “protect” the silver layers by oxidizing in place of the silver oxidizing. In other words, the sacrificial layers are sacrificed for the good of the coating. It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat treat the article, and thus at least partially oxidize the nichrome layers, because heat treating allows for use of the coated article in automotive glass applications.

The appellant asserts that the coated substrate taught by the applied prior art would not inherently possess the claimed light transmission of at least 80% because Hartig allegedly only teaches a visible transmission of 76%. The examiner respectfully disagrees. The claims are rejected by a combination of references, therefore, the visible transmission, sheet resistance, and emissivity of the resulting structure are obviously not disclosed by just one of the references. The appellant is hard pressed to explain how the applied prior art teaches the exact same structures illustrated in Figure 1 and Figure 2 of the current application, yet the structures somehow fail to inherently possess the claimed properties.

The appellant mentions the existence of unexpected results. The examiner respectfully disagrees. Firstly, the appellant has failed to show that the alleged unexpected results are related to the zinc oxide layer (22). The current specification ([0046]) compares the coated article of Examples 1-3 of USPN 6,686,050 to Lingle (see Figure 5 of USPN 6,686,050) with the coated article in Figure 1 of the current specification. The coated articles are wildly different. The appellant has failed to show, or attempt to show, that the alleged unexpected results are due to zinc oxide layer. Secondly, the alleged unexpected results mentioned in the specification are not unexpected. The specification asserts that the zinc oxide layer (22) unexpectedly results in one

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or more of higher visible transmission, improved thermal stability, lower sheet resistance, and lower emissivity (all upon heat treatment). Depauw teaches that these results are not unexpected. Depauw discloses that a zinc oxide layer, located in an identical position to that currently claimed, results in an article with high visible transmission, improved thermal stability upon heat treatment, and low emissivity (see entire document including column 4, lines 6-40, column 5, lines 37-46, column 6, lines 17-25, and column 9, lines 3-10). Depauw even discloses that the location of the zinc oxide layer above the sacrificial metal layers is particularly important (column 4, lines 6-18). It is further noted that the specification acknowledges that the reasons for the alleged unexpected results are not entirely clear ([0031]). Not only does Depauw disclose that the results are expected, Depauw at least partially explains the reason for the results. Depauw discloses that the zinc oxide layer may diffuse through the sacrificial layer to effect a degree of passivation of the silver (column 4, lines 6-18).

Claim 11

The appellant asserts that the applied prior art fails to teach or suggest the claimed properties. The examiner respectfully disagrees. Considering that the coated article is substantially identical in terms of substrate, structure, layer materials, and layer thicknesses, compared to the claimed article (and the article taught by the specification) it appears that the coated article inherently possesses the claimed properties.

Claim 15

The appellant asserts that the applied prior art fails to teach or suggest the claimed limitations for the reasons set forth above regarding claim 1. The examiner respectfully disagrees for the reasons set forth above.

Claims 30 and 32

The appellant asserts that the applied prior art fails to teach or suggest the claimed limitations for the reasons set forth above regarding claim 1. The examiner respectfully disagrees for the reasons set forth above.

**E. Section 103(a) rejections based on Lemmer in view of Depauw in view of Koch**

The appellant asserts that no motivation exists to modify Lemmer. The examiner respectfully disagrees. Lemmer does not specifically mention using a multi-layer dielectric layer, but Koch discloses that it is known in the art to use a silicon nitride dielectric layer or a multi-layer comprising a silicon nitride layer and a tin oxide layer (see entire document including column 3, lines 35-47). Koch discloses that tin oxide has a high deposition speed while silicon nitride is very durable (column 3, lines 35-47). Koch discloses that using a multi-layer of tin oxide and silicon nitride advantageously results in the advantages of each material (column 3, lines 35-47). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the dielectric layer from any suitable dielectric material, such as a multi-layer of silicon nitride and tin oxide, because the multi-layer possesses the advantages of each layer, and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

atp

*SPJ*

Conferees:

ANDREW PIZIALI  
PRIMARY EXAMINER



Terrel Morris

/Jennifer Michener/

Quality Assurance Specialist, TC1700

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